

# **SUSTAINABILITY TRENDS AND THE AUTOMOTIVE INDUSTRY: TRUCKIFICATION AND ELECTRIFICATION**

How are automakers positioned to manage the sustainability imperative and associated transition risk and opportunity in the coming decade?

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After looking at a broader analysis of how major global automakers are positioned to decarbonize their fleets we focus on the question of value for automotive companies, shareholders the stakeholders around the world. Constellation's Maturity and Momentum (M2) Model provides a forward-looking view of transition risk and opportunity that automakers must face as we cross the chasm to a decarbonized future.

Let's take a closer look.

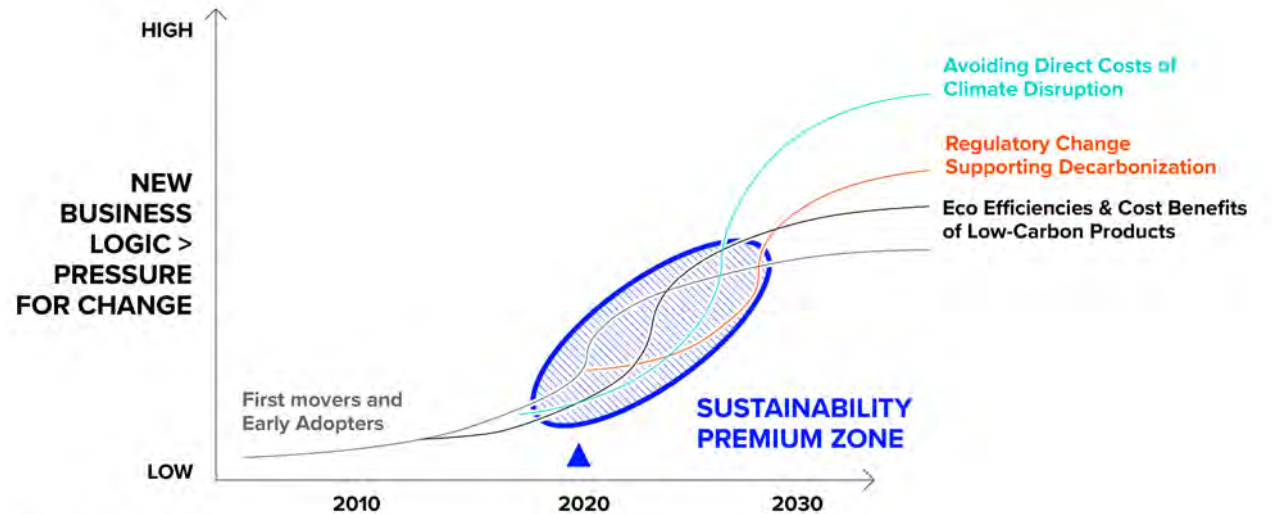


## Sustainability premium zone: Where transition risks and opportunities are maximized

The new business logic of our decarbonized future made its first appearance in the 2010s and will fully emerge over the current decade. A cascading series of forces will reshape the demand for products and services that meet customer needs and expectations but reduce climate impacts. We have already seen the early adopters begin to reshape demand in the automobile sector. Tesla's Model 3 is now the best-selling passenger car in California, beating Toyota and Honda, in terms of comparable sales. There will be more pressure on the ICE market as electric vehicle prices fall and the total cost of ownership decreases. Future regulatory changes and the direct costs of climate disruption will consolidate the shift within a decade. By 2030, the successful execution of a firm's decarbonization strategy will be table stakes for businesses to successfully compete.

The current decade will be of historic business upheaval and opportunity as some companies successfully respond to the new pressures while others do not. We define the sustainability premium zone as that period when durable competitive advantage resulting in market share gains and enhanced business model leverage will be obtained by companies that successfully manage their ability to deliver climate advantaged products. This transition period will create new competitive risks and new opportunities for competitive advantage.

FIGURE 31



Source: Constellation, 2020

## Evidence for an emerging sustainability premium, five-year total return (equity only)

Tesla, the global leader in electrification, has led the way for other disruptors that seek to transform the automobile sector. Almost all the disruptors have benefited from a sustainability premium. Their continued success will depend on moving from early adopters to the early majority of buyers. Advancing electrification to the mainstream will likely require meaningful economic advantages for consumers, such as lower initial and total cost of ownership.

The market has thus far rewarded the auto disruptors. Compared to the sector average total shareholder return (TSR) of 5.4% during the 2015-2019 period, the group that leads the pack in ZEV and PHV sales (on a percentage of total production basis) has yielded an average TSR of 26.2%.

FIGURE 32



COMPANY	Total Shareholder Return 2015-2019	Average Total Shareholder Return 2015-2019
GAC	30.1%	26.2%
Tesla	15.0%	
Geely	76.6%	
BYD	11.3%	
BAIC	-2.2%	
SECTOR AVERAGE	5.4%	

Source: Refinitiv ESG, 2020

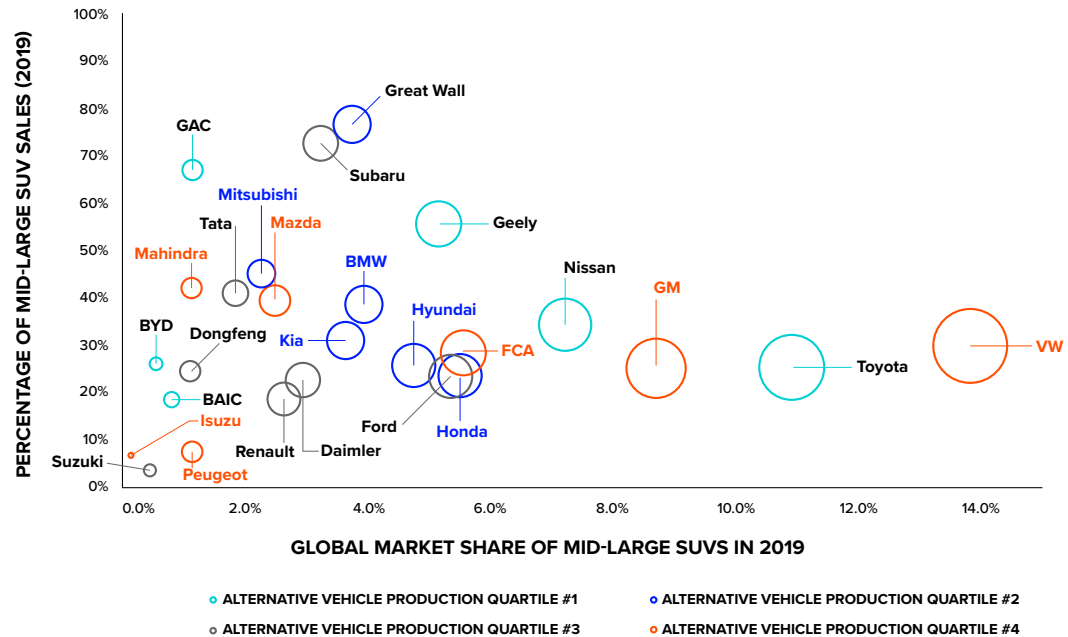
## SUV intensity could pose increasing transition risks

Figure 33 illustrates the global market share of mid-to-large SUVs against the percentage of sales of each automaker in the mid-to-large SUV category. The color-coding shows the 2019 level of alternative drive vehicle sales by each company with top-quartile performance depicted in green down to bottom-quartile depicted in red.

Among the most mid-to-large SUV-intensive companies, Geely, GAC, Subaru and Great Wall, only Subaru is below average in alternative drive vehicle current sales as a percentage of total sales, and potentially at greater mid-to-large SUV-based transition risk. Among the mid-to-large SUV market share leaders, FCA, GM and VW are each in the current bottom quartile of alternative drive vehicle sales, suggesting considerable transition risk, while Toyota and Nissan are in the top quartile, indicating reduced transition risk.

FIGURE 33

### TRUCKIFICATION TREND AMONG AUTOMOBILE MAKERS (2019) GLOBAL SALES OF MID-TO-LARGE SUVs (EXCLUDING ZEV AND PHV SUVs)



Source: MarkLines Data; Constellation Analysis

# SUV intensity could pose increasing transition risks

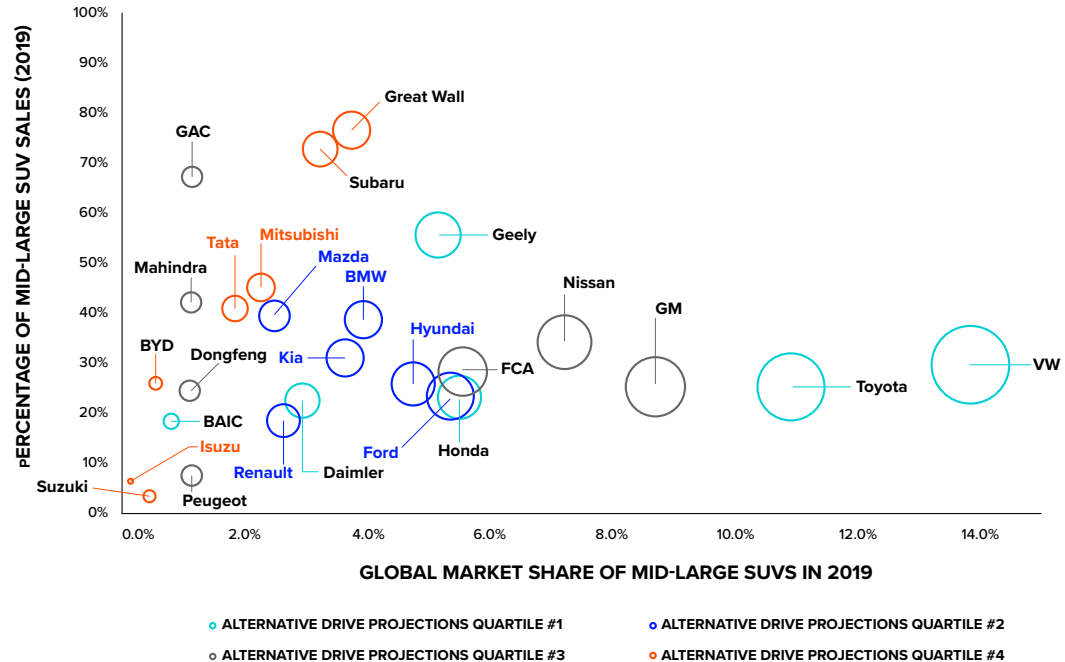
The transition risk and opportunity picture changes when overlaid with future projections for alternative drive vehicle sales by the automakers.

Among the most mid-to-large SUV-intensive automakers, Subaru's risks would appear to increase as it moves from grey to orange. Great Wall also moves from blue to orange, but due to its overall lack of transparency rather than product trajectory.

VW, the mid-to-large SUV market share leader, is going all-in on alternative drive (primarily electric) vehicles, while GM is taking a more defensive position.

FIGURE 34

## TRUCKIFICATION TREND AMONG AUTOMOBILE MAKERS (2019) GLOBAL SALES OF MID-TO-LARGE SUVs (EXCLUDING ZEV AND PHV SUVs)

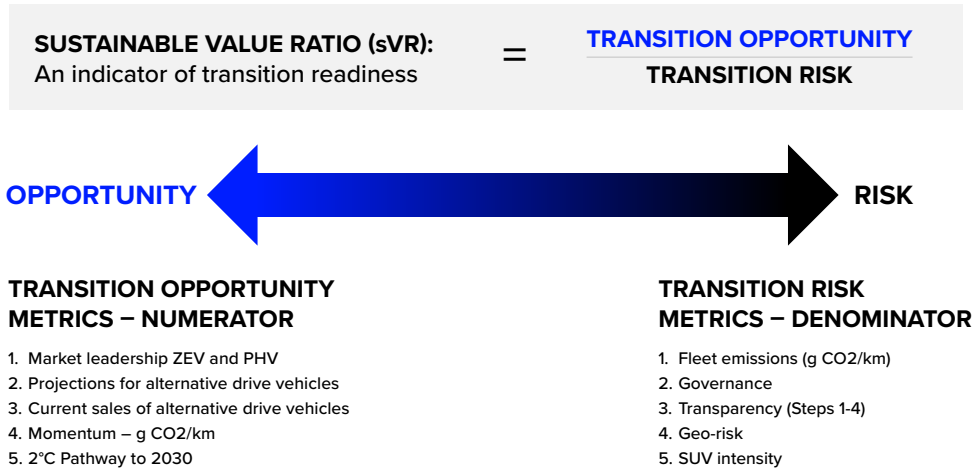


Source: MarkLines Data; Constellation Analysis



# Calculating the Sustainable Value Ratio – a measure of transition risk and opportunity

FIGURE 35



Source: Constellation, 2020

Looking forward, a new sustainable value equation takes shape in which transition opportunity variables create the new numerator driving upside potential, and the transition risk factor the potential for downside performance. The sustainable value ratio creates a simple current forward-looking index of the upside to downside exposure of each company as they embark on the 2020 to 2030 business transition.

FIGURE 36

Rank	Company	Transition opportunity	Transition risk	Sustainable value ratio
1	Tesla	100.0	23.8	4.21
2	BYD	80.0	35.4	2.26
3	BAIC	82.3	43.8	1.88
4	VW	55.6	46.2	1.20
5	Daimler	48.4	43.3	1.12
6	Geely	67.4	61.4	1.10
7	Renault	31.8	30.5	1.04
8	Hyundai	42.4	41.5	1.02
9	BMW	36.0	38.6	0.93
10	Kia	37.0	42.0	0.88
11	Honda	35.4	41.7	0.85
12	Toyota	41.3	49.3	0.84
13	GAC	49.7	60.7	0.82
14	Peugeot	30.1	42.0	0.72
15	Mazda	29.3	43.1	0.68
16	Nissan	29.1	44.0	0.66
17	GM	25.7	49.4	0.52
18	Suzuki	17.0	43.5	0.39
19	Mitsubishi	13.2	59.4	0.22
20	Ford	7.3	50.1	0.15
21	Dongfeng	9.9	77.6	0.13
22	Tata	5.0	55.2	0.09
23	Subaru	5.9	68.2	0.09
24	FCA	4.3	54.9	0.08
25	Great Wall	6.6	93.1	0.07
26	Mahindra	3.2	51.3	0.06
27	Isuzu	1.7	45.5	0.04

Source: Constellation Research & Technology and Refinitiv, 2020



# Geo-Risk Calculation 2020-2030

Calculating the sVR separates the M2 risk indicators from opportunity variables. The calculation adds a geo-risk factor based on the International Council on Clean Transportation's (ICCT) assessment of regional fleet fuel emissions performance standards and targets for each region.

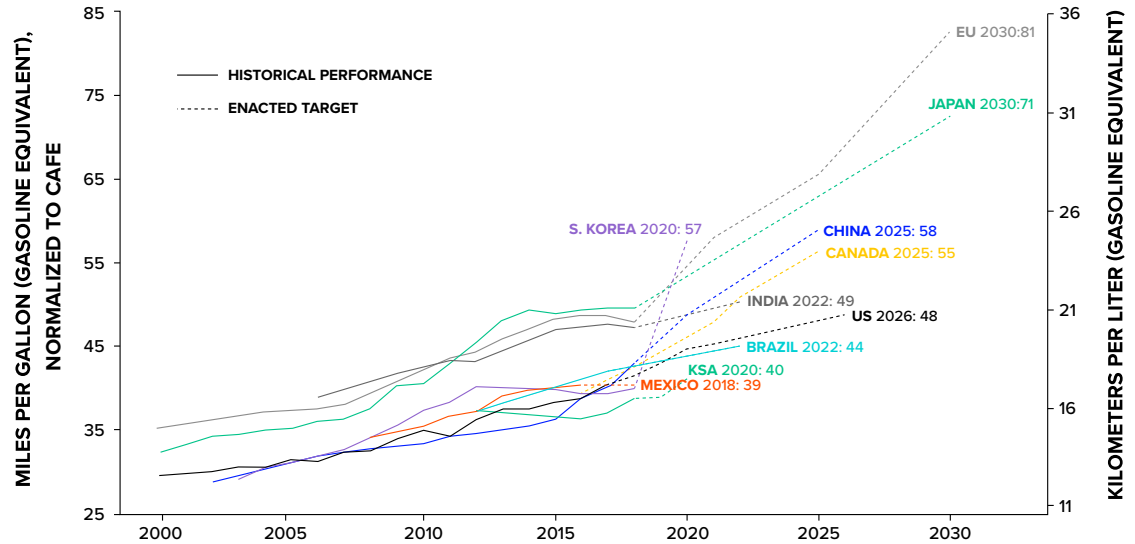
Geo-risk is calculated based on the percentage of a company's total sales within each region, multiplied by the regional risk factor, creating a geo-risk factor for each automaker. For example, the EU has the strictest targets set to date requiring a company's average fleet fuel economy to be 59g CO2/km by 2030, while Russia has yet to set any meaningful targets. Depending on their sales by region, automakers will vary in terms of regulatory and geo-risk exposure.

FIGURE 37



Source: Constellation, 2020

## PASSENGER CAR FUEL ECONOMY, NORMALISED TO CAFE



Source: ICCT, May 2020

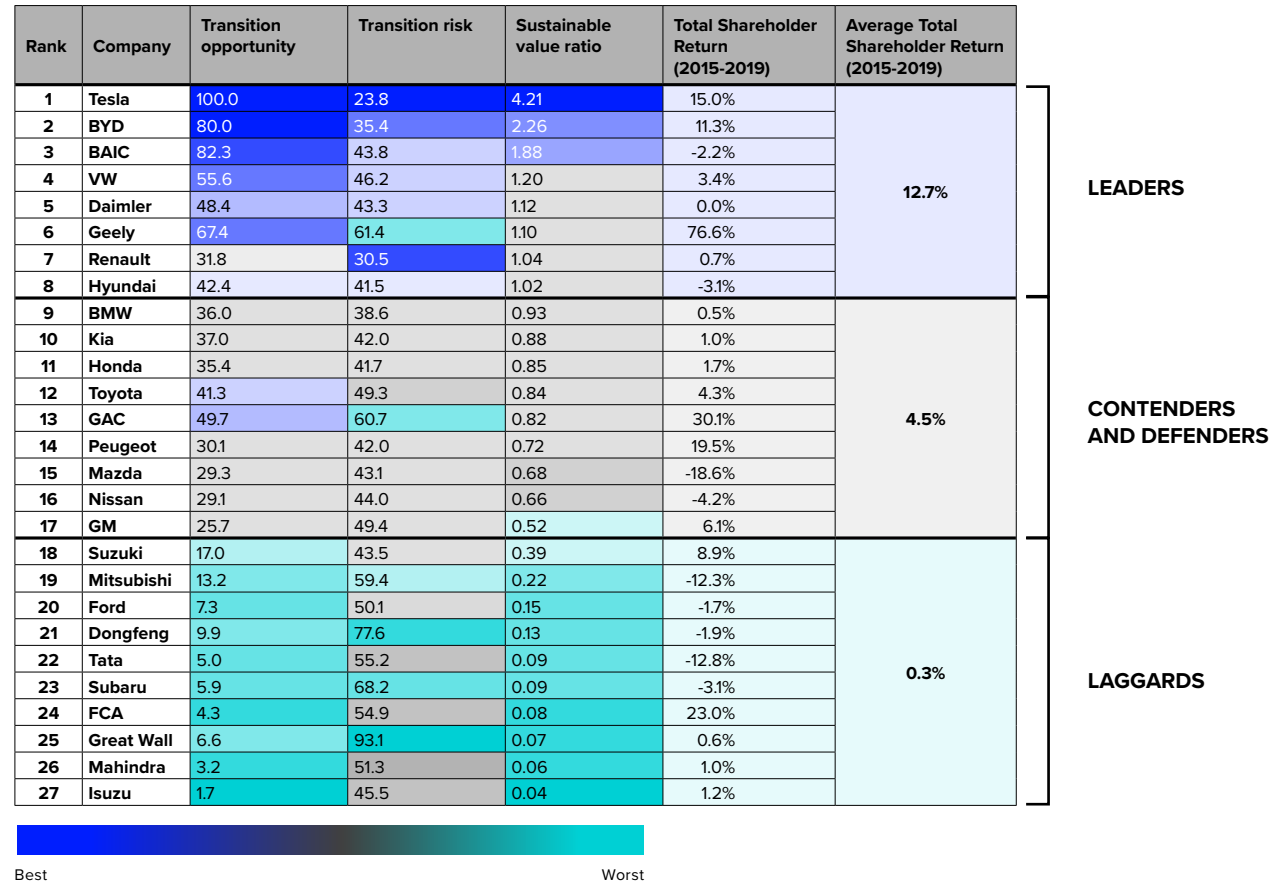


# Sustainable Value Ratio – Transition opportunity and risk

Calculating the sustainable value ratio creates a picture of future transition opportunity and risk exposure. The leader group, including both the disruptors and incumbents, are committed to transformation and share a strong upside focus with strong risk mitigation efforts. The contenders have made transition plans but without the all-in strategy of the leaders, while the defenders have laid out plans but, in many cases, they are less aggressive and have a bigger gap to close. Laggards have not made clear how they will transition and have a significant risk that will need action.

While any comparisons of shareholder returns among a small set of companies over a relatively short period of time should be viewed with caution, we find it compelling that automakers in the Leader group on our sustainable value ratio metric (scoring above 1.0) significantly outperformed on TSR, in comparison to those in Contender/Defender and Laggard groups, at 12.7%, 4.5% and 0.3%, respectively. While the full impact of the sustainability premium (described above) is expected to develop over the next several years, it may well be that what the market is rewarding, in addition to innovation, is quality of management to guide the company through the transition. Quality management, from our analysis, is transparent, has experience with integrating new technology and has publicly committed to a defined plan. While the data set is too small to come to any conclusions about the drivers of shareholder return, the next 24 to 36 months should see further separation in the returns of decarbonization haves vs. have nots.

FIGURE 38



Source: Constellation, 2020



# Decarbonization racetrack and Sustainable Value Ratio

Overlaying the sustainable value ratio scores on the emissions fleet data (both absolute and trend values) produces a visual depiction of where the companies are and how fast they are moving toward the 2030 target and trajectory bringing the auto sector into alignment with the 2°C objective.

This decarbonization racetrack depicts where companies are with respect to decarbonizing their fleets in line with a 2°C pathway. The 2019 starting line assumes the need to have an average fleet fuel economy of 124g CO<sub>2</sub>/km to be on a 2°C pathway with a 3-5g CO<sub>2</sub>/km rate of annual improvement. The chart indicates where companies are relative to that benchmark. The 2025 and 2030 lines highlight the 99g and 80g CO<sub>2</sub>/km values companies need to achieve. The higher its position in the above graphic, the faster the company is decarbonizing its fleet.

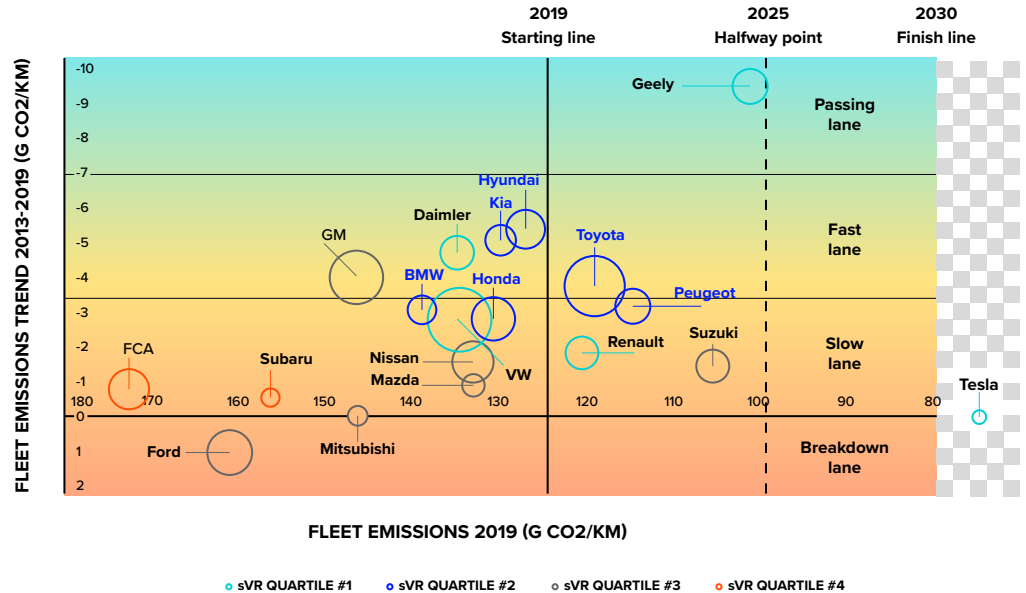
While Geely has been decarbonizing rapidly and is already almost at the 2025 mark, Ford and FCA are far behind the 2019 starting line. In fact, Ford's fleet emissions are increasing. Suzuki looks close but year-on-year progress has been slow, and its relatively strong performance is based on small, fuel-efficient ICE vehicles. Can they keep up?

Tesla is way out in front, but will it continue to own the ZEV market as others step up? The big cluster in the center represents a crowded field, with some meaningful spread in the distance they will need to travel to get ahead.

Of note, more efforts to form partnerships and joint ventures are emerging, especially involving those in the back of the pack because time is now critical for them. Building the capabilities that produce a high sustainable value ratio takes years for most firms. For those starting from a low base, that may be too long.

FIGURE 39

## DECARBONIZATION RACETRACK

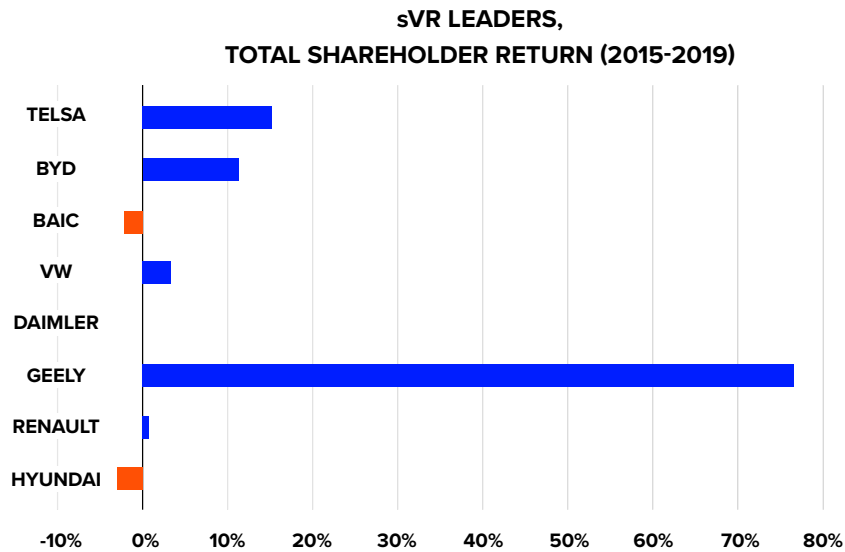


Source: Constellation, 2020

## Leaders

From an investor's view, BAIC, Daimler and Hyundai, which have underperformed financially in this Leaders group, seem poised to capture new alternative drive vehicle opportunities as the market shifts.

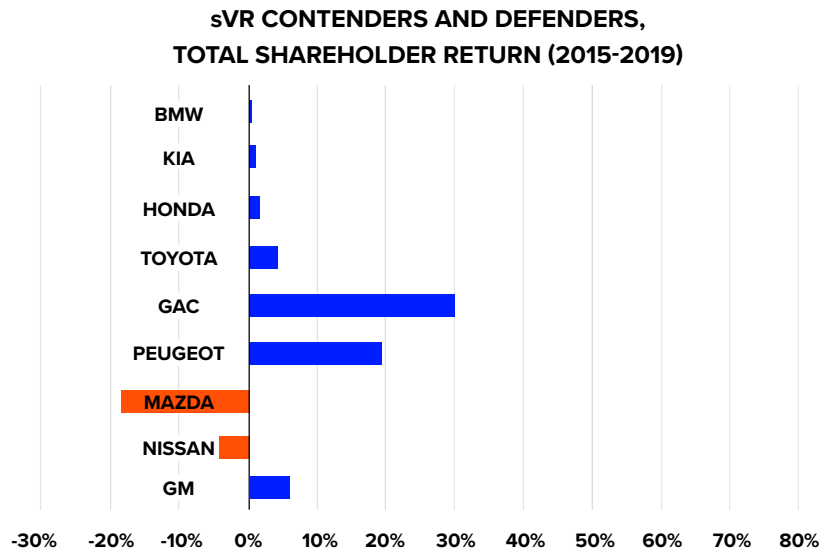
FIGURE 40



Source: Refinitiv, 2020

## Contenders and defenders

In the contenders and defenders category, of particular note is GAC with a 30.1% TSR. As previously mentioned, GAC is one of the automobile sector disruptors that has seen substantial growth in its sale of ZEVs in the last few years. Should this trend continue, they would climb into the leaders category, further amplifying the outperformance on TSR of the group.

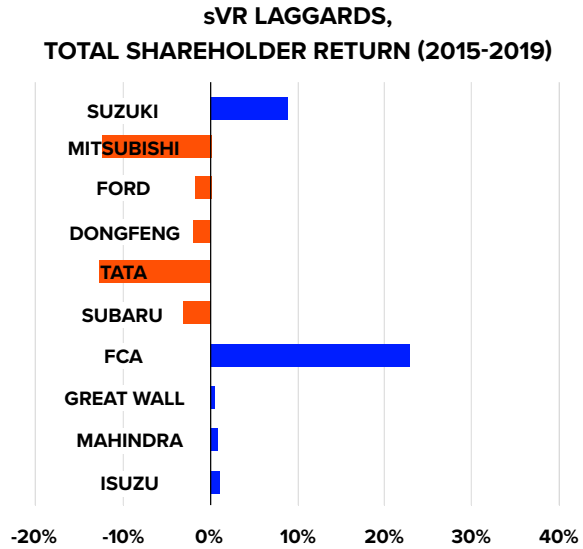


Source: Refinitiv, 2020

# Laggards

Those nearer the bottom of our sVR, such as FCA and Suzuki, which have outperformed on TSR and are less well-positioned for the transition, may have greater shareholder risk as decarbonization pressures build.

FIGURE 41



Source: Refinitiv, 2020

## Definitions

- **Leader:** A term used to connote outperformance by a company, placing it in approximately the top quartile on the analytic being presented.
- **Contender:** A term used to connote performance by a company indicating mid quartile performance, but with a trend towards the top quartile.
- **Defender:** A term used to connote performance by a company indicating mid quartile performance, but with little indication of movement towards higher or lower quartiles.
- **Laggard:** A term used to connote performance by a company indicating lowest quartile performance with little or no evidence of movement towards higher quartiles.

## Acronyms:

- CO2 – carbon dioxide
- g CO2/km – grams of carbon dioxide per kilometer
- ZEV – zero-emission vehicle
- PHV – plug-in hybrid vehicle
- APEC – Asia-Pacific Economic Cooperation
- ICCT – International Council on Clean Transportation
- ESG – environmental, social and governance
- ICE – internal combustion engine
- SUV – sport utility vehicle
- sVR – sustainable value ratio
- M2 – Maturity & Momentum

This is chapter 3 of the Sustainability Trends and The Automotive Industry: Truckification and Electrification report.  
Discover more in this series:

[Overview of the Sustainability Trends and The Automotive Industry report](#)

[Chapter 1: How have recent trends in market demand complicated decarbonization for automakers?](#)

[Chapter 2: How did the world's major automakers compare on climate impact management over the past decade?](#)

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